

## CLAIMS:

1. A low-pressure vapor discharge lamp comprising a radiation-transmitting discharge vessel (1) enclosing, in a gastight manner, a discharge space (3) provided with a gas filling,  
the gas filling being substantially free of mercury and comprising an indium  
5 compound and a buffer gas,  
the discharge vessel (1) comprising discharge means (2) for maintaining a gas discharge in the discharge space (3),  
the discharge vessel (1) being provided with a luminescent layer (4),  
the luminescent layer (4) comprising a luminescent material based on a  
10 nitridosilicate or on an oxonitridosilicate.
2. A low-pressure vapor discharge lamp as claimed in claim 1, characterized in that the luminescent material comprises rare-earth emitters.
- 15 3. A low-pressure vapor discharge lamp as claimed in claim 2, characterized in that the luminescent material comprises europium, cerium, or ytterbium emitters.
4. A low-pressure vapor discharge lamp as claimed in claim 1 or 2, characterized in that the luminescent material comprises an oxonitridosilicate comprising aluminum.
- 20 5. A low-pressure vapor discharge lamp as claimed in claim 1 or 2, characterized in that the luminescent layer (4) comprises a luminescent material selected from the group formed by:  
 $(\text{Sr}_{1-x-y-z}\text{Ba}_x\text{Ca}_y)\text{Si}_2\text{N}_2\text{O}_2:\text{Eu}_z$ , where  $0 < x < 0.2$ ,  $0 < y < 0.2$  and  $0 < z < 0.1$ ;  
 $\text{Ca}_{1-x-y}\text{Sr}_x\text{Si}_2\text{N}_2\text{O}_2:\text{Eu}_y$ , where  $0 < x < 0.5$  and  $0 < y < 0.1$ ;  
 $(\text{Sr}_{1-x-y-z}\text{Ca}_x\text{Ba}_y)_2\text{Si}_5\text{N}_8:\text{Eu}_z$ , where  $0 < x < 1$ ,  $0 < y < 1$  and  $0 < z < 0.1$ ;  
 $(\text{Sr}_{1-x-y-z}\text{Ba}_x\text{Ca}_y)_2\text{Si}_{5-a}\text{Al}_a\text{N}_{8-a}\text{O}_a:\text{Eu}_z$ , where  $0 < x < 1$ ,  $0 < y < 1$ ,  $0 < z < 0.1$  and  $0 < a < 4$ ,  
and  
 $(\text{Sr}_{1-x-y-z}\text{Ba}_x\text{Ca}_y)\text{Si}_2\text{N}_2\text{O}_2:\text{Yb}_z$ , where  $0 < x < 0.2$ ,  $0 < y < 0.2$  and  $0 < z < 0.1$ .
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6. A low-pressure vapor discharge lamp as claimed in claim 1 or 2, characterized in that the luminescent layer (4) further comprises a luminescent material selected from the group formed by:

- 5  $\text{Y}_3\text{Al}_5\text{O}_{12}:\text{Ce};$   
 $(\text{Y}_{1-x}\text{Gd}_x)_3(\text{Al}_{1-y}\text{Ga}_y)_5\text{O}_{12}:\text{Ce}$ , where  $0 < x < 1$  and  $0 < y < 1$ ;  
 $\text{Sr}_2\text{CeO}_4:\text{Eu}$ ,  $\text{Y}_2\text{O}_3:\text{Eu,Bi};$   
 $(\text{Y,Gd})_2\text{O}_3:\text{Eu,Bi};$   
 $\text{Y(V,P)O}_4:\text{Eu};$   
10  $\text{Y(V,P)O}_4:\text{Eu,Bi};$   
 $(\text{Sr,Mg,Ca})\text{S}:\text{Eu};$   
 $\text{Y}_2\text{O}_2\text{S}:\text{Eu};$   
 $(\text{Ba,Sr})\text{MgAl}_{10}\text{O}_{17}:\text{Eu,Mn};$   
 $\text{ZnS}:\text{Cu,Al,Au};$   $\text{SrGa}_2\text{S}_4\text{Eu};$   
15  $(\text{Sr,Ba,Ca})(\text{Ga,Al})_2\text{S}_4:\text{Eu};$   
 $(\text{Y,Gd})\text{BO}_3:\text{Ce,Tb};$   
 $(\text{Y,Gd})_2\text{O}_2\text{S}:\text{Tb};$   
 $\text{LaOBr}:\text{Ce,Tb};$   
 $(\text{Ba,Sr})\text{MgAl}_{10}\text{O}_{17}:\text{Eu};$   
20  $(\text{Ba,Sr})_5(\text{PO}_4)_3(\text{F,Cl}):\text{Eu};$   
 $\text{Y}_2\text{SiO}_5:\text{Ce};$   
 $\text{ZnS}:\text{Ag},$

and

$\text{La}_{0.7}\text{Gd}_{0.3}\text{OBr}:\text{Ce}.$

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7. A low-pressure vapor discharge lamp as claimed in claim 1 or 2, characterized in that the emission from the luminescent layer (4) and the emission from the gas discharge together form white light.

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8. A low-pressure vapor discharge lamp as claimed in claim 1 or 2, characterized in that the discharge vessel is surrounded by an outer bulb, the outer surface of the discharge vessel being coated with the luminescent layer.

9. A low-pressure vapor discharge lamp as claimed in claim 1 or 2, characterized in that the discharge vessel (1) is surrounded by an outer bulb (6), the outer bulb (6) being coated with the luminescent layer (4).